

# Universidade Federal do Ceará – UFC Programa de Pós graduação em Geografia Laboratório de Geoecologia da Paisagem e Planejamento Ambiental - LAGEPLAN



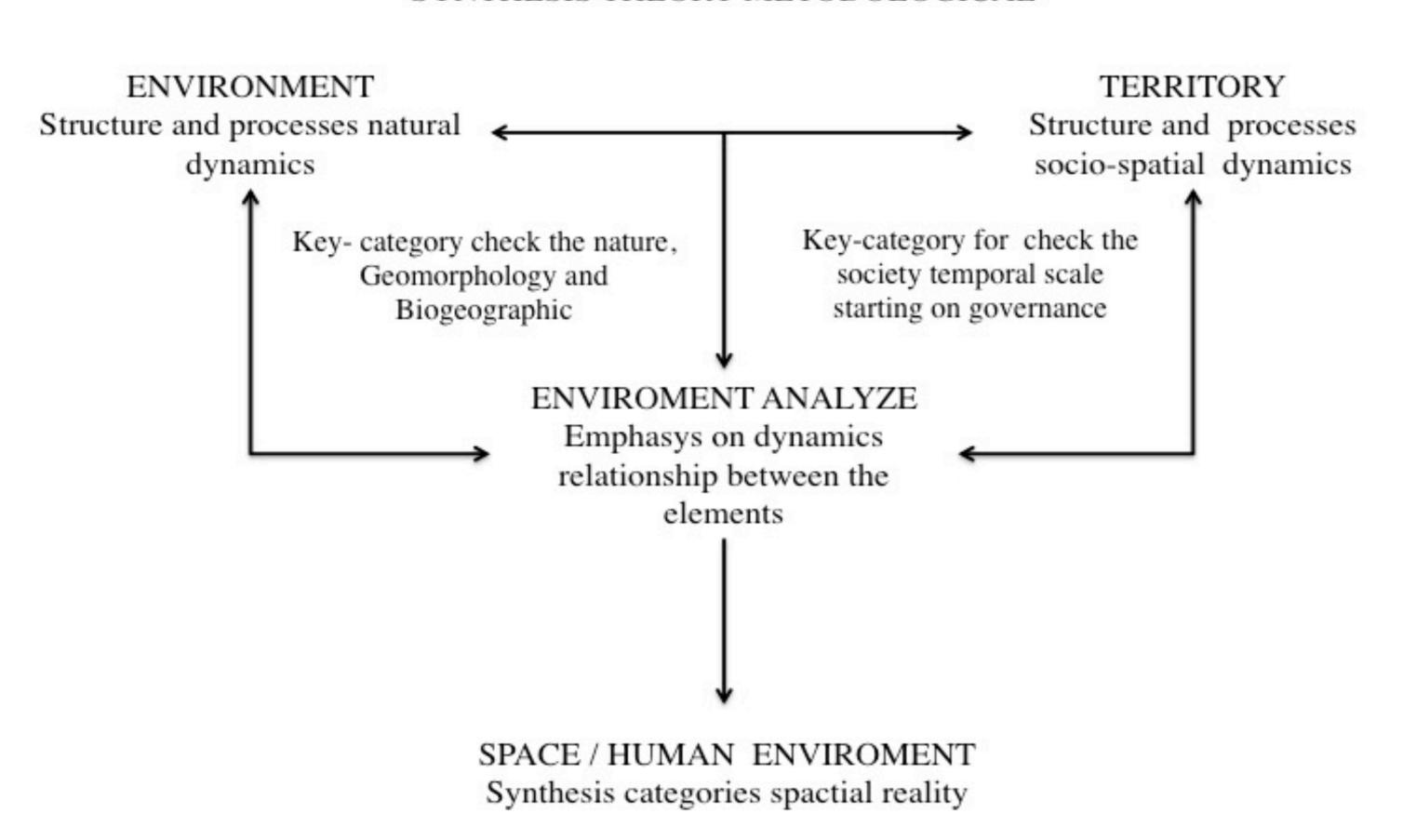




# Natural processes and geoenvironmental dynamics of Bitupitá beach - Ceará – Brazil Bruno Gonçalves Pereira – Master in geography, bachelor in oceanography

With the effort to understand the coastal environment, the beach of Bitupitá, in Barroquinha Ceará - Brazil, is placed as a theoreticalempirical object, aiming at verifying how changes occur in the natural frame, starting with the implementation of governance strategies, especially projects and structures for the modernization of the territory. With the technique of sedimentary testimonies are put interpretations that seek to understand remodeling of the natural features and how the components of nature are organized throughout the geoecological history (natural dynamics). Socio-spatial processes of territorial formation and modernization by governance strategies introduce new characteristics to the natural environment, resulting in "new" features, with two regulatory dimensions, the dimensions of natural selfregulation and socio-spatial regulation. In turn, socio-spatial regulations tend to overlap with natural self-regulation, for example, with the construction of dams. With this study we seek to verify the effectiveness of an integrated, systemic approach based on a clear social context, where the process of modernization of the territory should be the guiding thread for the alteration of the flows of matter and energy on the coast.

### SYNTHESIS THEORY-METODOLOGICAL



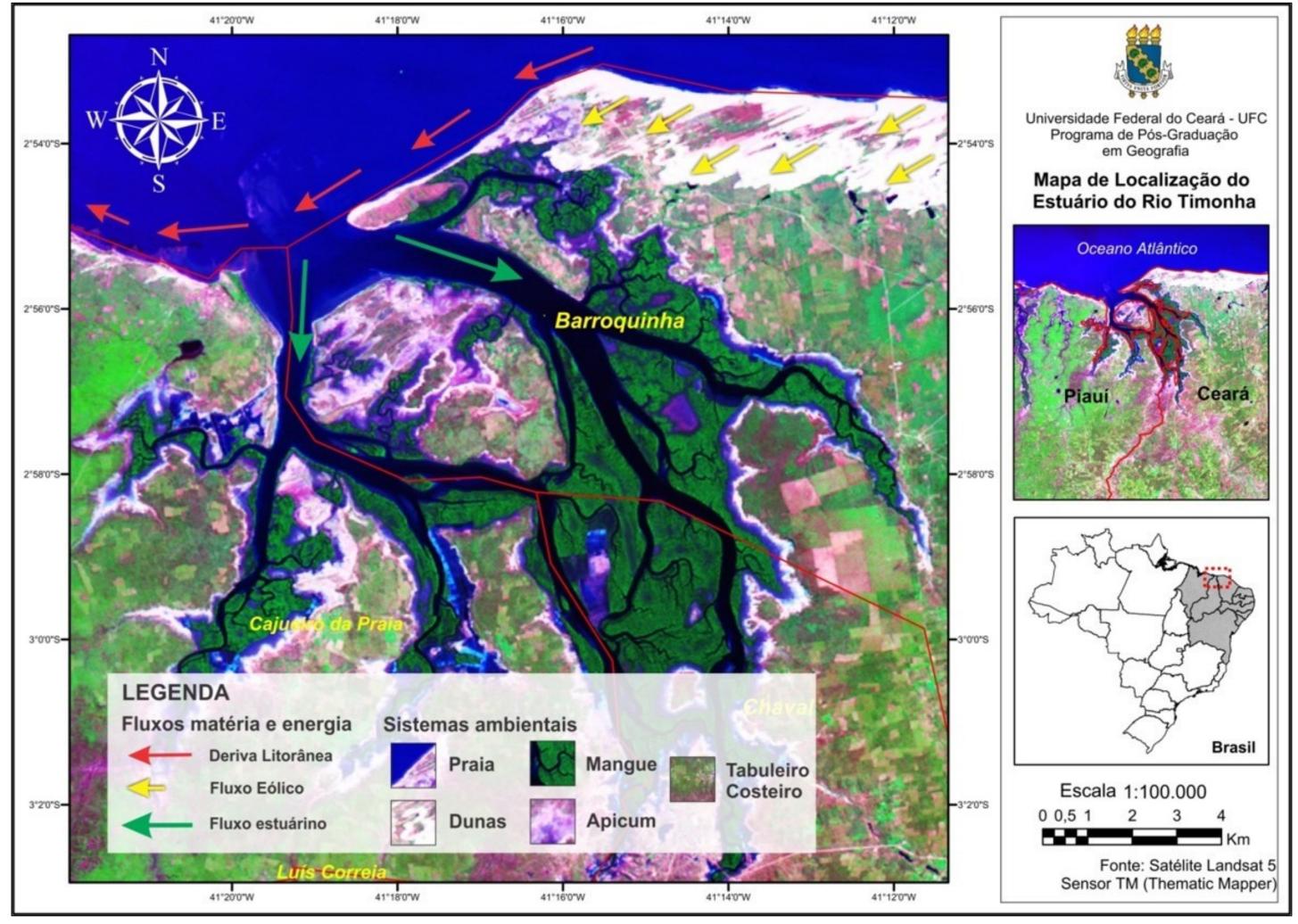
## SYNTHESIS OPERATIONAL METODOLOGIC

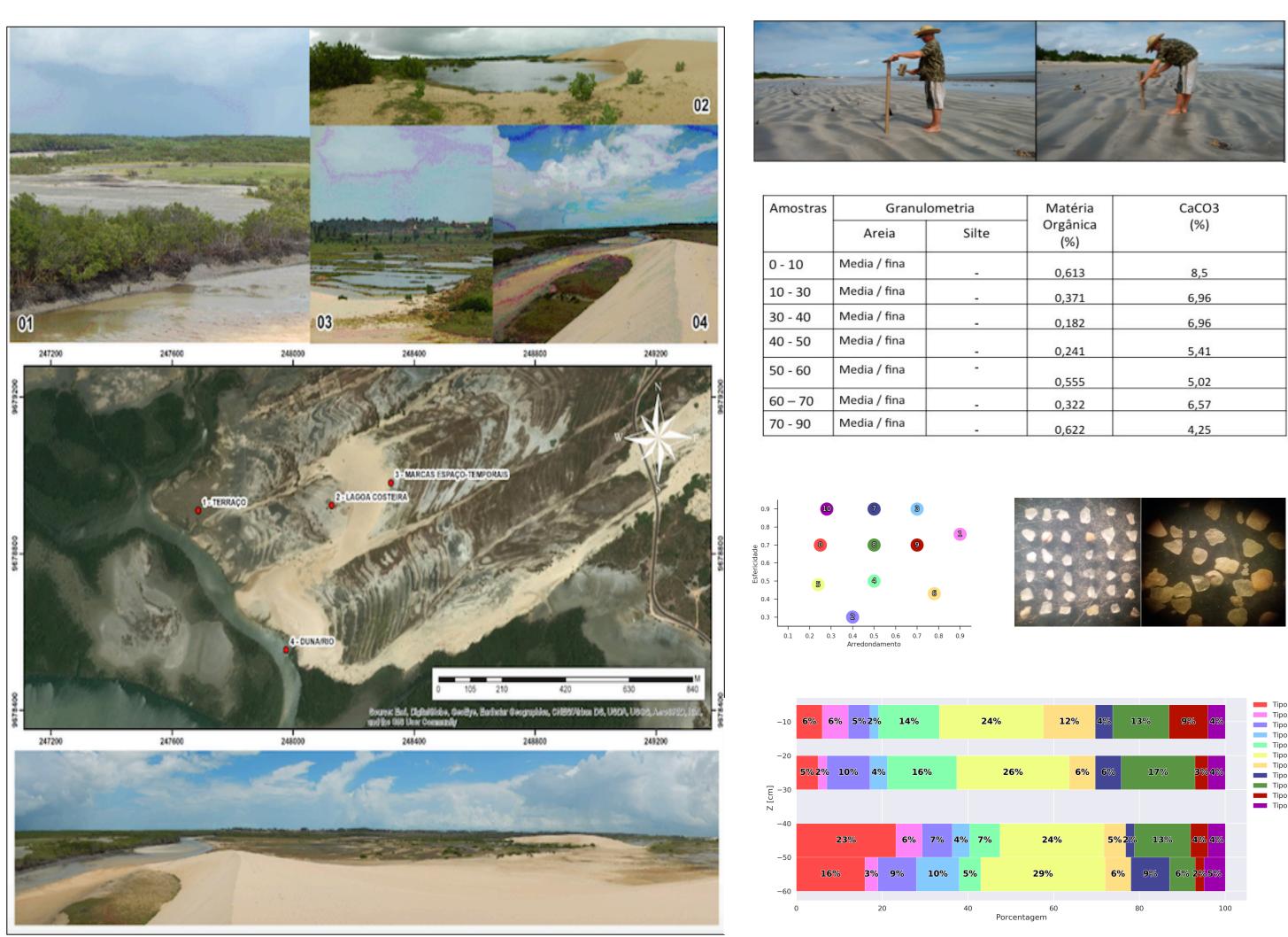
TOOLS	RESULTS				
Cartographic and sedimentary analysis for description nature components and relationships., Field work.	Evolution of relief; Geomorphic compartmentation natural and dynamic framework of the coastal landscape	NATURAL DIMENSION  geoecological processes of nature organization	1° APPROXIMATION: Classification of the natural environment in landscape units according to the practices of the		
Bibliographic research and documentary review of plans and public policies of regulation / modernization of the territory	Check actions for formation and modernization of the territory	SOCIETY DIMENSION  Processes of society organization	natural environment. and to verify existing governance strategies in the territory		
Integrated landscape analysis, comparative aerial photographs and satellite images considering the periods of modernization of the territory.	Synthesis correlated between natural and social aspects that make up the geographic space.	ENVIRONMENT DIMENSION Result of the articulation of natural and social processes	2° APPROXIMATION: Mapping ot the human environment, description of 'new' forms on coastal landscape		
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## 3° APPROXIMATION:

Analysis of future scenarios based on the verification of the dynamics of the natural and social processes of the present time and the possibility of creating strategies and tools for forecasting future environmental problems based on a temporal cut based on the elaboration, development and responses to the political and economic projects which seek "modernization" (or commodification) in a given territory.

Flow chart and synthesis table of the methodological path of the research





Cartographic and sedimentologic interpretations of environmental dynamics



Social housing development towards the federal areas of environmental preservation



State highway (CE – 187) forming new features of the coastal landscape resulting from the modernization of the territory.

TECTORS	PRESCUEE	IN AD A CITIC	4310MED	Nomes
VECTORS	PRESSURES	IMPACTS	ANSWER	NOTES
Social	Conversion of	domestic sewage	Effectiveness	Exposes
housing	natural areas	pollution, depletion of	of the Plan	traditional
development	into urbanized	expansion mangrove	Local Housing	families to
and	areas, value	areas, road	of Social	situations of
urbanization	the land.	construction in dune	Interest and	environmental
programs		field bypass,	othes strategies	vulnerability
			on governance	
Dam Itaúnas	Regularization	Changes in coastal	Organization	High-risk
	of the water	sedimentary balance,	of local river	consequences
	flow and the	sedimentation of the	basin	in semi-arid
	entrance of	river mouth and the	committees	regions.
	nutrients and	estuary. Saline	with	
	sediments in	intrusion. Changes	community and	
	the marine-	coastal ecological	university	
	coastal system	communities by	representatives.	
		variation of the		
		disposal of nutrients by		
		the flow regularization		